

MULTI-SERVICE SEGMENTATION AND REASSEMBLY DEVICE  
THAT MAINTAINS ONLY ONE  
REASSEMBLY CONTEXT PER ACTIVE OUTPUT PORT

Bidyut Parruck  
Chulanur Ramakrishnan

ABSTRACT OF THE DISCLOSURE

A multi-service segmentation and reassembly (MS-SAR) integrated circuit is disposed on a line card in a router or switch. The MS-SAR can operate in an ingress mode so that it receives packet and/or cell format data and forwards that data to either a packet-based or a cell-based switch fabric. The MS-SAR can also operate in an egress mode so that it receives data from either a packet-based or a cell-based switch fabric and outputs that data in packet and/or cell format. The MS-SAR has a data path through which many flows of different traffic types are processed simultaneously. Each flow is processed by functional blocks along the data path in accordance with one of several application types, the application type for a flow being predetermined by the host processor of the router or switch. Segmentation, reassembly and partitioning techniques are disclosed that reduce costs and facilitate high-speed operation.